FINAL REPORT

ANALYSIS OF FAUNAL REMAINS FROM THE
BENJAMIN BANNEKER SITE (18BA282)

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The following is a final report on the faunal remains from the Benjamin Banneker Site (18BA282). The assemblage consisted of 1085 bone, scale and shell fragments and weighed 1271.4 grams. The remains were analyzed by feature and are presented in Tables 1-5.

The entire assemblage was poorly preserved which limited its analytical potential. As expected, this resulted in a low number of identifiable faunal specimens most of which were dense, weather resistant skeletal elements such as teeth. Conversely, small animal remains, especially those of fish, were well preserved and provided valuable information to the study.

Methods

The faunal remains were cleaned and placed in clear, plastic polybags prior to delivery to the Archeology Laboratory, Department of Anthropology, The Catholic University of America. Preliminary cleaning, sorting and bagging saves valuable analytical costs.

Initially, the assemblage was separated by provenience. Each bag of material was segregated into identifiable/unidentifiable specimens. The remains were, then, grouped by animal type (class, genus, species, etc.) and specific characteristics (element type, element portion, meat portion, physical condition, modifications, etc.) were recorded for each specimen. The results were, then, tabulated on standard data forms which are used to produce a final report.

The segregated remains were placed in clear plastic bags with a provenience/faunal data label stapled inside.

Identification of the remains was aided, in some instances, by use of a modern skeletal comparative collection maintained in the Archeology Lab. Furthermore, the interpretation of butchering patterns and meat portions was aided by data recovered from current fieldwork on farm community butchering practices (Clark, 1985). The entire assemblage is presented, below, by feature.

FEATURE 10

Feature 10 was a large, deep, basin shaped refuse pit which yielded a faunal assemblage of 743 bone, scale and shell fragments weighing 831.7 grams (Table 1 and 2).

The fragments were, generally, in poor physical condition, not unlike the materials from Feature 22. Small broken fragments were common-place, the majority of which exhibited longitudinal cracks, surface pealing and fungus pitting, usually the result of prolonged weathering and soil deterioration. Many specimens were heavily abraded from soil creep or trampling and a few exhibited rust or green discoloration probably from association with deteriorating metal refuse (iron, copper). Many pieces were incinerated, the result of food preparation or refuse disposal near fires, and a few specimens exhibited rodent scavenging marks.

Although many "layers" were excavated in Feature 10, there were only minor differences in the faunal remains throughout the deposit. The upper layers yielded fewer fragments and small animals such as mice, frog, and toads were identified in the lower layers. However, these species are most likely intrusive in the deposit.

Overall, many fragments were too small and deteriorated for species identification and most of those identified were tooth fragments or other pieces of dense, more weather resistant bones.

Fourteen species were recorded mostly mammals, aves and pisces which accounted for the bulk of the remains (Table 1). Less prevalent were amphibians and oysters remains:

Class	Number of Specimens	Number of Species
Mammalia	270	(6)
Aves (birds)	213	(3)
Amphibia	67	(2)
Pisces (fish)	180	(2)
Bivalvia (oyster)	39	(1)

The entire assemblage is discussed in detail, below, by species.

Bos taurus (Cow)

Six cow bone fragments were recorded, consisting of teeth (3) and post-cranial (3) remains (Table 2). Two rib fragments and an upper hindleg shaft probably from a round roast, were identified (Figure 1).

The maturation data from both tooth wear and bone fusion patterns indicated one individual was 1.5 years old and another was over 3.5 years of age.

Sus scrofa (Pig)

Pig remains included 4 cranial and 6 post-cranial fragments (Table 2). Teeth included molar and premolar fragments from mostly immature individuals. Post-cranial specimens were vertebrae and leg bone fragments from loin, picnic-shoulder and hock meats (Figure 2).

The maturation data indicated that one individual was over 2 years old, another was about 1.5 years and, yet another was less than a year old. This diversity, obviously, indicates that young pigs as well as, older, "breeder" stock, were eaten.

Ovis aries (Sheep)

One ankle bone was identified as sheep (Table 2). The maturation data indicate an age of, at least, 1.5 years old.

Caprinae (Sheep/Goat)

Five fragments were recorded but were too deteriorated for specific identification (Table 2). This material consisted of fore and hindleg fragments.

There were 152, other, large mammal fragments but they were unidentifiable. Most were leg (95) and rib shaft (52) fragments. They probably represent large domestic mammals, especially since large wild animals were not identified in the assemblage.

Sciurus carolinensis (Gray Squirrel)

Remains of this species included 3 post-cranial fragments (Table 2). This species usually prefers wooded areas and is often used as a food resource.

Rattus sp. (Rat)

Two rat post-cranial bones were uncovered (Table 2). Although

rats are common scavengers, few bones exhibited gnaw marks suggesting the refuse was buried without prolonged exposure to rodent or carnivore scavenging.

Peromyscus sp. (Field Mouse)

Thirty-seven mouse elements were recorded and represented a variety of skeletal parts from immature individuals (Table 2). As mice are common burrowing animals, the remains probably represent intrusive material from burrow nests.

Meleagris gallopavo (Turkey)

Three fragments were identified and all represented leg elements (Table 2). Though a common barnyard species, these were the only turkey remains recorded from the site.

Gallus gallus domesticus (Chicken)

Chicken remains were very prevalent (100) and represented a variety of cranial and post-cranial elements indicating that whole chicken were probably processed in the area. Common elements included ribs, innominates (pelvis) and leg bone fragments representing wing, thigh and leg meats.

A number of thick, large size eggshell fragments probably from chickens were uncovered.

Bonasa umbellus (Ruffled Grouse)

One grouse ulna (wing) element was recorded (Table 2). Common through the eastern U.S., the grouse is found in wooded-brushy environments and is a popular game bird in most areas.

Bufo (cf.) americanus (American Toad)

Amphibian remains were, surprisingly, common and bone elements were well preserved suggesting the material maybe intrusive (Table 2).

Six toad bones were identified including vertebrae, innominates and leg bones (Table 2). Toads occupy a variety of habitats from grassy yards to woodlands as long as there is ample supply of insects and moisture.

Rana (cf.) clamitans (Green Frog)

Frog remains (12) included a variety of skeletal elements which were well preserved and probably intrusive. The green frog inhabits shallow water areas such as springs, swamps, brooks as well as moist areas near rotting trees.

Many unidentifiable frog-toad (Salientia) remains were recorded.

Again, these, normally fragile elements, were well preserved and were, most likely, intrusive.

Perca flavescens (Yellow Perch)

Yellow perch remains were common (22) and included scales and cranial bones (Table 2). This species occupies a variety of fresh-water habitats and is a popular food fish. Data from well preserved scales indicated individuals weighed three-fourths of a pound or less.

Morone americana (White Perch)

The remains of white perch were more common than any other fish species. A popular commercial fish, it prefers bay and river estuaries, and rarely occupies ocean waters. Using data from scales and bones, individuals weighed between $\frac{1}{2}$ and $1\frac{1}{4}$ pounds. The remains were mostly scales and cranial fragments, undoubtedly, re-presenting discarded butchering refuse.

Other fish materials included a diversity of skeletal elements including skull fragments, vertebrae, ribs, rays and scales were very fragmented and unidentifiable. Nevertheless, the preservation of such small, fragile elements, despite adverse weathering and soil deterioration, increases the information potential of any faunal analysis.

Crassostrea virginica (Oyster)

Oyster shell fragments were common (38) and represents the only invertebrate species in the collection. The oyster is a very popular and important commercial species. The shells were often pulvarized and used as fertilizer and mortar.

Overview Discussion: Feature 10

This was the largest (743) assemblage from the site. Fourteen species were identified and the most common remains were of large mammals, birds and fish, especially those of pig, cow, chicken and white perch.

Large mammal remains were most abundant, nearly all, either leg bone or rib shaft fragments. The majority of unidentifiable fragments were probably from large domestic species, since larger wild animals were not represented.

Wild animal remains consisted of smaller species, especially

fish and oysters which, apparently, constituted important secondary
food resources.

A variety of elements were recorded for the domestic species.
As the bone material was highly deteriorated, identifiable fragments
were usually teeth and other, more weather resistant, bone
elements. Cow remains included fore and hindleg elements repre-
senting shank and rump-round meat portions. Common pig remains
were, also, fore and hindlimb elements from picnic shoulder and
ham portions. A number of fragments exhibited fine knife cut or
axe marks and a few were hand-sawed. Absent were fragments with
symmetrical saw marks and refined meat portions such as steak cuts
and thin cut ham slices.

Chicken remains included wing, innominate (pelvis) and leg
fragments representing wing, thigh and leg meats. Fish remains
were mostly cranial fragments and scales, representing refuse
from initial processing where fish are scaled and deheaded. The
evidence indicates that fish were small sized, most weighing less
than one pound.

Maturation data for large domestic mammals species were varied.
Cows were generally older, about 3.5 years of age or older. They
probably represent draft or dairy animals. In contrast, pig ages
varied from younger (less than one year) to older (2 years old or
more) individuals, the latter probably representing "breeding"
stock. Contemporarily, pigs are butchered before a year old
when their meat is most tender.

FEATURE 22

The faunal assemblage from Feature 22 consisted of 337 bone,
scale and shell fragments which weighed 433.7 grams (Table 1).
Two distinct levels were identified in this feature and the
corresponding assemblages were studies separately for comparative
purposes (Tables 3 and 4).

The entire faunal assemblage was in poor physical condition
consisting mostly of smaller bone fragments exhibiting varying

degrees of deterioration including fungus pitting, dry rot cracking (lengthwise), pealing of bone surfaces, abrasion from soil creep or stream rolling, burning, discoloration, and scavenging. Accordingly, the study yielded a high number of unidentified bone fragments. Futhermore, of those identified, teeth were very common because they represent dense bone elements more resistant to weathering and natural decomposition. However, although deterioration was great, delicate small animal remains, especially fish scales and bones, were recovered, probably the result of flotation processing, smaller mesh screen size, etc.. The entire assemblage is discussed, in detail, below.

Feature 22 (Layer 1, Level 1)

This collection consisted of 142 bone and shell fragments (Table 1). As noted above, the material was in poor condition consisting mostly of small broken pieces, many of which were burnt or incinerated. A few specimens exhibited rust-brown and green discolorations, probably from contact with deteriorating iron and copper materials. The remains are described below by species.

Bos taurus (Cow)

Cow remains were scarce (6) consisting of 3 teeth and fore and hindleg fragments (Table 3). The leg bone remains included a cut radius (lower foreleg) from a shank meat portion and an upper hindleg fragment from a rump roast (Figure 1).

The available maturation data from tooth wear and bone fusion patterns indicated that one individual was at least 3.5 years old at death.

Sus scrofa (Pig)

Pig remains (16) were very common and most (15) were tooth fragments (Table 3). The only post-cranial specimen was an upper foreleg fragment from a picnic-shoulder cut (Figure 2).

The maturation data suggest diverse ages for pigs. Two individuals were more than 2.5 years old but two others were less than a year old at death. The evidence suggests the remains of, both, young "tender" pigs and older "breeding" stock were represented in the assemblage.

Ovis aries (Sheep)

Sheep bones included 1 premolar tooth fragment (Table 3) which exhibited extensive wear suggesting an age of 3.5 to 4 years.

The remainder of the large mammal bones (91) were unidentifiable due, mostly, to their fragmented condition. Leg bone fragments were most abundant, representing 78% of the total. Many of these specimens were burnt or incinerated, the result of food preparation and/or refuse disposal near fires. One element exhibited rodent gnaw marks which matched the incisors (front teeth) tooth pattern of a rat. However, the overall pancity of rodent or carnivore gnaw marks indicated the refuse was not exposed to prolonged or extensive scavenging.

Gallus gallus domesticus (Chicken)

Six chicken bones were identified and represented back and wing portions. In general, aves or bird remains were uncommon in the area excavated. The only other bird materials included several unidentifiable leg bone fragments and eggshell pieces (Table 3).

Terrapene carolina (Eastern Box Turtle)

Two box turtle shell fragments constituted the only reptile remains identified (Table 3). Box turtles are very common in the temperate areas of the eastern U.S. and were often used as a food resource.

Morone americana (White Perch)

Fish remains were relatively common and included vertebrae, cranial elements and scales, in order of abundance. White perch was the only identified species (2 scales) in the collection and is a very popular "game" fish. It is a semi-amadromous, estuarine species which inhabits brackish waters of bays and river systems and is usually never found in the ocean.

Traveling in large groups, the white perch is easily caught seasonally and was probably common in the lower reaches of The Patapsco River located about a mile from and within view of the site.

Crassostrea virginica (American Oyster)

A number of oyster shell fragments were recorded (7). This is an important commercial species and is commonly found on sites in the Chesapeake Bay region. The shells were often pulvarized and used as fertilizer or mortar.

Overview: Feature 22 Level 1

Eight species were identified in this assemblage (Table 1 and 3). Large mammal remains were most common, representing 80% of the entire assemblage and much of this material was unidentifiable due to the poor condition of the fragments. Of the total large mammal specimens, only 28 were identified to species level. Of these, 23 were tooth fragments, not surprising, since they are more resistant to deterioration. Cow, pig and sheep remains were identified and pig bones were most common of the three.

Bird remains were less abundant but a few domestic chicken bones were identified which undoubtedly, represented an important food species.

Identifiable wild animal remains were scarce including only smaller species such as fish and oysters which probably constituted important secondary food recources.

Many of the elements from large domestic mammals represented bulk meat portions such as ham and shoulder cuts (pig) and leg roast portions (cow and sheep).

The maturation data for the large domestic species were diverse. Sheep and cow remains yielded ages in excess of 3,5 years. In contrast, both young (less than 1 year) and old (more than 3.5 years) pigs were recorded. The ages suggest many animals were kept several years as "breeding" stock.

Feature 22: Layer 1, Level 2

The assemblage from Level 2 consisted of 195 bone, scale and shell fragments and eight species were identified (Table 4). As noted elsewhere, this material was in poor physical condition represented by small broken pieces which were usually unidentifiable. The entire collection is presented below by species.

Bos taurus (Cow)

Thirteen cow bones were recorded and most were tooth fragments (Table 4). Post-cranial remains were varied, including 2 innominate (pelvis) fragments, probably from rump or sirloin portions and

elements from the lower foreleg representing shank meats (Figure 1).

The maturation data from tooth wear and bone fusion rates, indicated two individuals were at least, 1.5 years of age.

Sus scrofa (Pig)

Thirteen specimens were identified as pig and nine were tooth fragments (Table 4). Post-cranial remains included a humerus (upper foreleg) fragment from a picnic-shoulder cut, a foreleg piece from a hock portion, and two hindleg bones representing a "shank half" and "butt half" ham (Figure 2).

The maturation data revealed that 2 individuals were less than a year old at death.

Caprinae (Sheep/Goat)

Three bones were assigned to this group as they were too deteriorated for specific identification (Table 4). All were post-cranial fragments of ribs and leg bones.

Equus sp. (Horse, Mule)

One foreleg fragment was identified as Equus (Table 4). Both mule and horse were common in the area and served a variety of purposes.

A host of other large mammal remains were recorded (110) but were too deteriorated for specific identification. Most were leg bone fragments, of which many were burnt or incinerated due to food preparation and disposal near fires. Two specimens were modified. One exhibited thin cut marks around the shaft, probably from a knife and the other, was a bone button, apparently, fashioned from a split rib section.

Rattus sp. (Rat)

One rat mandible (jaw) was identified (Table 4), representing the only rat bone from Feature 22. Very few bone fragments exhibited rodent gnawing, indicating that faunal refuse was not exposed to prolonged scavenging prior to deposition.

Peromyscus sp. (Mouse)

One mouse tooth was recorded (Table 4). This species is commonly found in wooded, brushy and grassey environments, and will often wander into domestic areas.

Aves sp. (Birds)

Bird remains were rare consisting of a few unidentifiable leg bone fragments and pieces of eggshell which were probaby chicken (Table 4).

Terrapene carolina (Eastern Box Turtle)

This material included only 2 carapace (upper) shell fragments (Table 2). This species is common in well-watered woodland-field environs and it often served as a food resource. The shells are often used for the production of domestic tools.

Morone americana (White Perch)

White perch remains (16) were relatively common, especially scales (Table 4). This species is a very popular food fish which prefers estuarine areas of bays and rivers but is rarely found in ocean waters. Scale and bone elements represented individuals less than a pound in size.

Other fish remains were unidentifiable cranial, vertebrae, rib and ray fragments (Table 4).

Gastropod (Snail)

A single snail shell fragment was recovered but was too deteriorated for specific identification.

Crassostrea virginica (Oyster)

One oyster fragment was recorded. This is a very important commercial species. The shells were often pulvarized and used as fertilizer or mortar.

Overview: Feature 22 - Level 2

This assemblage was generally similar to that of Feature 22 - Level 1, except several additional mammal species (Equus, mouse, rat) were identified for Level 2, but not in significant numbers. In each assemblage (Level 1 and Level 2) large mammal remains were most prevalent and cow and pig were the most common species identified. Only a few wild species were recorded and consisted of small animals such as fish which probably represented significant secondary food resources.

The distribution of bone elements and meat portions for

large domestic mammals was varied. Cow remains were mostly from leg bones representing rump, sirloin and shank meats. Common pig remains were,also, from leg elements representing picnic-should and ham portions.

The maturation data for large domestic mammals was similar to that from the Level 1 assemblage. Cows were generally older, at least 1.5 years of age, and pigs were younger, less than a year old.

FEATURE 86

This assemblage was very small (5) and weighed 6.0 grams. The material consisted of unidentifiable large mammal leg bone fragments (Table 5).

Conclusions

The faunal assemblage from the Benjamin Banneker Site (18BA282) consisted of 1085 bone, scale and shell fragments. The bulk of the remains were recovered from Features 10 and 22 and the assemblages were, generally, similar.

The remains were poorly preserved resulting in a low number of identifiable fragments. Of these, hard, dense weather resistant elements, especially teeth, were more commonly preserved and identified.

Fifteen species were identified and vertebrate remains were dominant, especially those of large domestic mammals, birds and fish. Invertebrate remains were, comparatively, scarce including only oyster shells and a single snail shell:

	Number of Specimens	Number of Species
Mammalia	524	7
Aves	228	3
Reptilia	4	1
Amphibia	67	2
Pisces	215	2
Bivalvia	46	1
Gastropoda	1	
Total	1085	15

Large mammal remains were most prevalent and nearly all were leg and rib bone fragments which is not surprising, as they represent the meaty parts of the animal. Commonly identified domestic species were cow, pig and to lesser extent, sheep. Pig remains were dominant which corresponds with historic records from a local store near the Banneker farm. The records show the exclusive purchase of pork meats (Bedini,1972). Chicken was also important. Although uncommon in Feature 22, remains of this species were abundant in the Feature 10 material.

Wild animal remains were less prevalent but fish, especially white perch and oyster remains, were consistantly identified and

were, undoubtedly, important secondary food species.

The distribution of elements/meat portions varied between species. The majority of fragments were probably from food refuse. However, teeth represent non-meaty elements which are usually discarded during initial butchering. Post-cranial cow elements were mostly from the fore and hindlegs represented shank and rump/round roast meats. Common pig remains were more diverse including shoulder, fore and hindleg elements representing picnic-shoulder, hock, and ham meats. Sheep elements were fore and hindleg bones from leg meats. Chicken remains included wing, thigh and leg portions. Fish remains were, mostly, cranial fragments and scales which represented discarded butchering refuse.

Frog, toad, and mouse elements were relatively common in Feature 10. But the high degree of preservation of delicate bones, plus representative elements of complete skeletons, suggests the material is intrusive. Toads and frogs are adapted to a well-watered, moist, damp environment which was possibly associated with Feature 10.

Only a few specimens exhibited evidence of sawing or cutting which is not surprising considering the small size of most fragments. A number of fragments, all from large domestic mammals, were cut and axed. Interestingly enough, cut marks were usually confined to the joint end of the element, the result of disarticulation. Such modification were often fine, thin knife blade cuts. In contrast, deep, broad axe marks, especially on cow and pig fragments, were observed across thick shaft sections, evidence of processing bulk leg meat portions such as hams or roasts. Sawing was rare and close inspection of these specimens indicated rough, non-symmetrical hand-saw techniques. Often the bones were sawed or cut through most of the shaft and, then, snapped off.

Numerous fragments were incinerated especially those from large mammal leg bones. This was the result of either food processing or refuse burning.

Maturation data using tooth wear and bone fusion growth rate patterns, varied between large domestic mammal species. In both feature assemblages, cows were older than pigs or sheep, usually

about 3.5 years of age. Although less common, sheep were 1.5 to 2.5 years of age. But pig ages were most diverse. As expected, some pigs were less than a year old. However, others were 2 years old, probably representing "breeding" stock.

In closing, it should be stressed that although the assemblages were poorly preserved, this analysis provided a wealth of valuable information, especially regarding subsistence patterns and butchering practices.

Refrences

Bedini, Silvio A.

    1972   Accounts of Benjamin Banneker. Unpublished Report. Washington, D.C. 20016.

Clark, David T.

    1985   Modern Farm Butchering Technology, An unpublished report. On file, Zooarcheology Research Facility, Department of Archeology. The Catholic University of America.

Table Explanations

The following is an explanation of the symbols and abbreviations used in data Tables. The specimens listed on the Tables are all fragments unless stated otherwise.

The Tables are organized by element and species. The complete scientific name, for each species, are used in the text, only. General animal listings are as follows:

-Lg. mam. = unidentifiable large mammal (cow or deer size).

-Med. mam = unidentifiable medium mammal (fox or raccoon size).

-Sm. mam. = unidentifiable small mammal (mouse or squirrel size).

-Aves = birds

-Sm., Aves = small bird (robin or sparrow size).

-Lg., Aves = large bird (turkey size).

-Caprinae = sheep/Goat

-Salinedae = Frog/Toad

-Pisces = Fish

Listings for teeth will sometimes include number suchas = 1-(12). The enclosed number refers to approximate age based on tooth wear patterns. Other references to maturation data are expressed as: (-) = immature and (+) = mature. Symbols for sawed elements are = [1] and cut or axed elements are = (1). The designation of "L" = a left element (L-ulna) and "R" = a right element (R-ulna). The symbol for scavenging is GN=gnawed.

A number of skeletal element terms for Aves, Reptiles, Amphibians and Pisces are different than those of mammals. The common elements are as follows:

Turtle

-carap. (carapace) = upper shell.

-plas. (plastron) = lower shell.

Pisces

-sca. (scale)

Table 1
Species Distributions–Benjamin Banneker Site (18BA282)

	Feature 10	Fea.22(L1,L1)	Fea.22(L1,L2)	Fea.86	Totals
Bos taurus	6–	6–	13–		25–
Sus scrofa	10–	16–	13–		39–
Ovis aries	1–	1–			2–
Caprinae	5–		3–		8–
Equus			1–		1–
Large mammal-unidentifiable	152–	91–	110–	5–	358–
Medium mammal-unidentifiable	5–				5–
Sciurus carolinensis	4–				4–
Rattus	2–		1–		3–
Peromyscus	37–		1–		38–
Small mammal-unidentifiable	34–		7–		41–
Gallus gallus domesticus	100–	6–			106–
Meleagris gallopavo	3–				3–
Bonasa umbellus	1–				1–
Aves spp.-unidentifiable	70–	2–	2–		74–
Aves spp.-Eggshell	39–	3–	2–		44–
Terrapene carolina		2–	2–		4–
Rana sp.	34–				34–
Bufo sp.	6–				6–
Selinedae	27–				27–
Perca flavescens	22–				22–
Morone americana	75–	2–	16–		93–
Pisces spp.-unidentifiable	72–	6–	22–		100–
Gastropoda sp.			1–		1–
Crassostria virginica	38–	7–	1–		46–
TOTALS	743–	142–	195–	5–	1085–
No. of SPECIES	14–	7–	8–		

Table 2 Feature 10: Element Distributions

Species	Bos 1222	Bos 1223	Bos 1234	Sus 1215	Sus 1222	Sus 1233	Sus 1234	Sus 1235	Sus 1251	Ovis 1211	Caprin 1219	Caprin 1222	Caprin 1235	Lg.mam 1215	Lg.mam 1222	Lg.mam 1223	Lg.mam 1227
Cranium																	
Maxillae																	
Molar						1-(17)			1-(22)								
Premolar	1-																
Canine																	
Incisor																	
Mandible			1-													1-	
Molar				1-(27)													
Premolar							1-(6)										
Canine																	
Incisor																	
Vertebrae							2-	1-									
Rib	1-	(1)-	1-												7-	(1)comb	
Sternum																	
Innominate																	
Clavical																	
Scapula																	
Humerus						1(-)			1(+)bnt								
Ulna																	
Radius												1-					
Carpal																	
Metacarpal																	
Phalanx																	
Femur			1-R									1-					
Tibia											1-	1-	1-				
Patella																	
Fibula																	
Tarsal																	
Metatarsal																	
Phalanx					1-					1-							
Unident. vert.															3-		
Unident. rib															(1)-	11-	
Unident. Innom.																	
Long Bone Frag.															12-	9-	
L.B.F. (bnt)														1-	1-		1-
L.B.F. (inc.)																	
TOTALS	2-	1-	3-	1-	1-	2-	3-	1-	2-	1-	1-	3-	1-	1-	24-	22-	1-

=70

Table 2 Feature 10: Element Distributions (con't)

Species	Lg.mam 1233	1234	1235	Sciuru 1221	1223	1235	Med.ma 1222	Rattus 1222	Perom 1222	1233	Sm.mam 1212	1222	1223	1233	1234		
Cranium									4-			1-	2-	1-			
Maxillae									5-								
Molar																	
Premolar																	
Canine																	
Incisor																	
Mandible										1-R			1-				
Molar		1-							2-								
Premolar																	
Canine																	
Incisor									1-	1-							
Vertebrae									4-	2-							
Rib		(1)-						1-									
Sternum																	
Innominate									2-								
Clavical																	
Scapula																	
Humerus									2-	2-							
Ulna				1-R	1-R			1-	2-								
Radius									1-								
Carpal																	
Metacarpal																	
Phalanx																	
Femur				1-L					3-								
Tibia									4(-)	1(-)				1-R	1(-)		
Patella																	
Fibula																	
Tarsal						1-											
Metatarsal																	
Phalanx		.											1-				
Unident. vert.											1-	1-	1-	10-			
Unident. rib	9-	18-	5-									1-	9-				
Unident. Innom.														1-			
Long Bone Frag.	10-	42-	9-				5-										
L.B.F. (bnt)	1-	4-															
L.B.F. (inc.)	1-	3-									1-						
TOTALS	21-	68-	15-	2-	1-	1-	5-	2-	30-	7-	2-	3-	15-	13-	1-		=186

Table 2 Feature 10:Element Distributions (con't)

Species	Gallus 1222	1223	1233	1234	1235	Meleag 1223	1224	Bonasa 1227	Aves 1222	1223	1233	1234	1235	Egg 1234	1235		
Cranium		5-	7-														
Maxillae	1-																
Molar																	
Premolar																	
Canine																	
Incisor																	
Mandible		1-	2-														
Molar																	
Premolar																	
Canine																	
Incisor																	
Vertebrae	1-			2-	1-				1-		2-	1-					
Rib	1-	6-	19-	5-	2-						4-	11-	2-				
Sternum	1-	2-	1-	1-					1-								
Innominate	4-	2-	2-														
Clavical																	
Scapula	3-	1-	3-							1-							
Humerus	1-	1-	1-	(1)-													
Ulna		1-	2-	1-				1-									
Radius									2-								
Carpal							1-										
Metacarpal																	
Phalanx																	
Femur		2-	2-			1-											
Tibia	1-	2-	2-	1-	1-		1-			2-		1-					
Patella																	
Fibula												1-					
Tarsal		2-	2-	1-													
Metatarsal																	
Phalanx		.															
Unident. vert.																	
Unident. rib																	
Unident. Innom.																	
Long Bone Frag.									4-			27-	10-				
L.B.F. (bnt)																	
L.B.F. (inc.)																	
		2-	1-											24-	15-		
TOTALS	13-	27-	44-	12-	4-	1-	2-	1-	8-	3-	6-	41-	12-	24-	15-	=213	

Table 2 Feature 10;Element Distributions (con't)

Species	Bufo 1219	Rana 1222	1233	Selin 1222	1223	1224	1233	1234	Perca 1222	1233	Morone 1222	1223	1233	1234	1235
Cranium									8-		1-		1-	2-	
Maxillae															
Molar															
Premolar															
Canine															
Incisor															
Mandible									2-						
Molar															
Premolar															
Canine															
Incisor															
Vertebrae	2-	2-	12-		1-									1-	
Rib				1-									1-	1-	
Sternum															
Innominate	2-		2-	2-		2-	2-								
Clavical		2-	2-												
Scapula		4-	4-	1-											
Humerus	2-	2-	1-	1-		2-	1-								
Ulna															
Radius			1-	3-		2-	1-								
Carpal		2-													
Metacarpal															
Phalanx															
Femur				1-		2-									
Tibia				1-											
Patella															
Fibula															
Tarsal															
Metatarsal															
Phalanx		.				2-									
Unident. vert.															
Unident. rib															
Unident. Innom.															
Long Bone Frag.								2-							
L.B.F. (bnt)															
L.B.F. (inc.)															
									7-sca	5-sca	7-sca	7-sca	2-sca	51-sca	1-sca
TOTALS	6-	12-	22-	10-	1-	8-	6-	2-	17-	5-	8-	7-	4-	55-	1-

=164

Species	Pisces 1222	1223	1233	1234	Oyster 1211	1212	1217	1222	1223	1226	1227	1233	1234	1251			
Cranium	5-	3-	13-	13-													
Maxillae																	
Molar																	
Premolar																	
Canine																	
Incisor																	
Mandible		1-		2-													
Molar																	
Premolar																	
Canine																	
Incisor																	
Vertebrae		1-		8-													
Rib		6-	6-	12-													
Sternum																	
Innominate																	
Clavical																	
Scapula																	
Humerus																	
Ulna																	
Radius																	
Carpal																	
Metacarpal																	
Phalanx																	
Femur																	
Tibia																	
Patella																	
Fibula																	
Tarsal																	
Metatarsal																	
Phalanx		.															
Unident. vert.																	
Unident. rib																	
Unident. Innom.																	
Long Bone Frag.																	
L.B.F. (bnt)																	
L.B.F. (inc.)				2=sca	7-	5-	2-	4-	2-	2-	2-	8-	3-	3-			
TOTALS	5-	11-	19-	37-	7-	5-	2-	4-	2-	2-	2-	8-	3-	3-			=110

Table 3 Feature 22(L1,L1):Element Distributions

| Species	Bos 1200	1201	1203	Sus 1200	1201	1202	1203	Ovis 1204	Lg.mam 1200	1201	1202	1203	1203	1204
Cranium														
Maxillae														
Molar														
Premolar		2-		1-										
Canine														
Incisor						1-	1-							
Mandible														
Molar		1-			1(-)	1(-)	2-(9)							
Premolar				1(-)	2-	1-(45)	2-	1-(48)						
Canine														
Incisor							2-(5)							
Vertebrae														
Rib												17-		
Sternum														
Innominate														
Clavical														
Scapula														
Humerus					(1)(-)R									
Ulna														
Radius		(1)±												
Carpal														
Metacarpal														
Phalanx														
Femur			1-											
Tibia														
Patella														
Fibula														
Tarsal														
Metatarsal	1-													
Phalanx														
Unident. vert.														
Unident. rib									3-					
Unident. Innom.														
Long Bone Frag.										12-	4-	26-	1-GN	2-
L.B.F. (bnt)										2-	5-	3-		
L.B.F. (inc.)									2-	12-	7-	9-		3-
TOTALS	1-	4-	1-	2-	4-	3-	7-	1-	7-	29-	11-	38-	1-	5-

=114

Table 3 Feature 22(L 1,L1): Element Distributions

Species	Gallus 1200	Lg. Av 1203	Egg 1200	1202	Terra 1201	1204	Morone 1203	Pisces 1200	1201	1203	Oyster 1201	1203			
Cranium								1-	1-						
Maxillae															
Molar															
Premolar															
Canine															
Incisor															
Mandible															
Molar															
Premolar															
Canine															
Incisor															
Vertebrae	1-								1-	3-					
Rib	3-														
Sternum															
Innominate															
Clavical															
Scapula															
Humerus															
Ulna	1-														
Radius															
Carpal															
Metacarpal															
Phalanx															
Femur															
Tibia															
Patella															
Fibula															
Tarsal															
Metatarsal															
Phalanx	1-	.													
Unident. vert.															
Unident. rib															
Unident. Innom.															
Long Bone Frag.		2-													
L.B.F. (bnt)															
L.B.F. (inc.)															
			2-	1-	1-cara	1-cara	2-sca				2-	5-			
TOTALS	6-	2-	2-	1-	1-	1-	2-	1-	2-	3-	2-	5-	=28		

Table 4 Feature 22(L1;L2): Element Distributions

Species	Bos 1207	1208	Sus 1208	1208	1209	1210	Caprin 1208	Equus 1208	Lg.Ma 1207	1208	1209	1210	Rattus 1207	Perom 1210	Sm.ma 1208	1210	
Cranium															2-		
Maxillae																	
Molar																	
Premolar																	
Canine																	
Incisor			1-			1-											
Mandible		1-								1-		2-	1-R				
Molar			1-(9)	1-						2-							
Premolar	1-(12)	3-(12)	2-		1(-)												
Canine																	
Incisor		3-	2-														
Vertebrae														1-			
Rib							1-			(1)-							
Sternum																	
Innominate		2-															
Clavical																	
Scapula						1-											
Humerus							1-										
Ulna		1-															
Radius		1-	1-					1-									
Carpal																	
Metacarpal																	
Phalanx		1-															
Femur						1-											
Tibia							1-										
Patella																	
Fibula			1-														
Tarsal																	
Metatarsal																	
Phalanx																	
Unident. vert.												12-					
Unident. rib										2-	1-	9-					
Unident. Innom.																	
Long Bone Frag.									1-	17-	1-	16-				5-	
L.B.F. (bnt)										3-	1-	10-					
L.B.F. (inc.)									2-	14-	1-	14-					
TOTALS	1-	12-	8-	1-	1-	3-	3-	1-	3-	40-	4-	63-	1-	1-	2-	5-	=146

Table 4&5.Feature 22(L1,L1)& Feature 86:Element Distributions

Species	Aves 1210	Egg 1210	Terrap 1208	Morone 1208	1210	Pisces 1207	1208	1210	Gastro 1210	Oyster 1208					F-86	Lg.mam 1245	1246	
Cranium				1-	2-	1-		2-										
Maxillae																		
Molar																		
Premolar																		
Canine																		
Incisor																		
Mandible																		
Molar																		
Premolar																		
Canine																		
Incisor																		
Vertebrae																		
Rib																		
Sternum																		
Innominate																		
Clavical																		
Scapula																		
Humerus																		
Ulna																		
Radius																		
Carpal																		
Metacarpal																		
Phalanx																		
Femur																		
Tibia																		
Patella																		
Fibula																		
Tarsal																		
Metatarsal																		
Phalanx																		
Unident. vert.							4-	7-										
Unident. rib							5-	3-										
Unident. Innom.																		
Long Bone Frag.	2-															4-		
L.B.F. (bnt)																		
L.B.F. (inc.)																	1-	
		2-	2-cara	3-sca	10-sca				1-	1-								
TOTALS	2-	2-	2-	4-	12-	1-	9-	12-	1-	1-	=46					4-	1-	=5

Bos taurus (Cow) Meat Portions.

Figure 1.

|	
1	ROUND
2	SIRLOIN
3	SHORT LOIN
4	RIB
5	CHUCK
6	FORESHANK
7	SHORT END OF BRISKET
8	FLANK
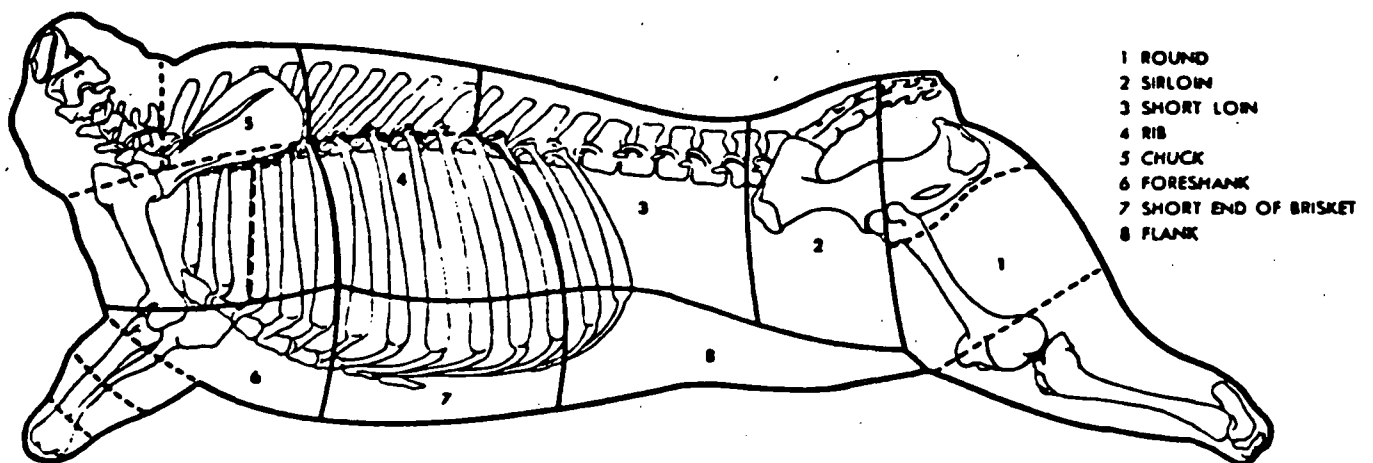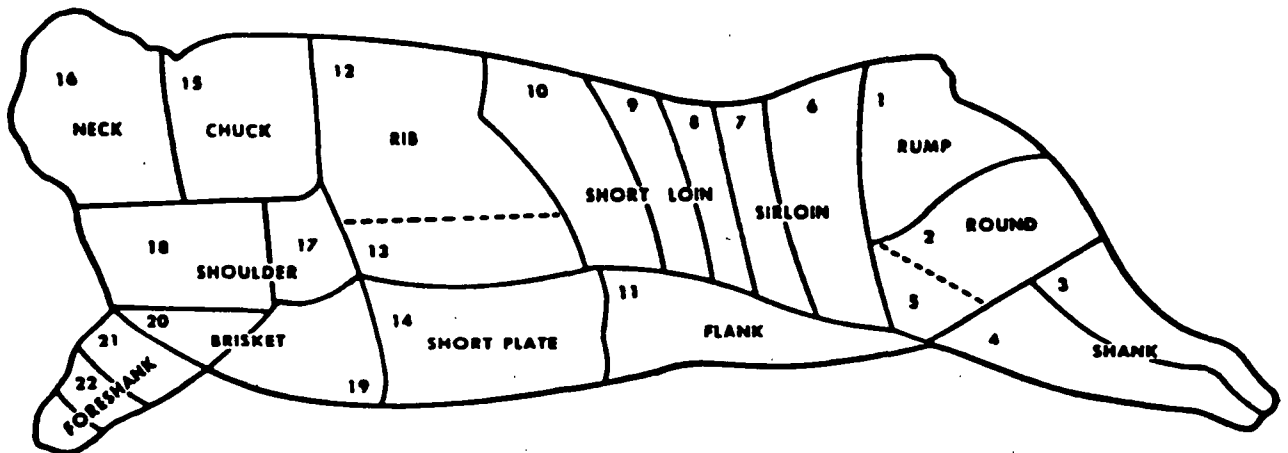
Sus scrofa (Pig) Meat Portions.

Figure 2.
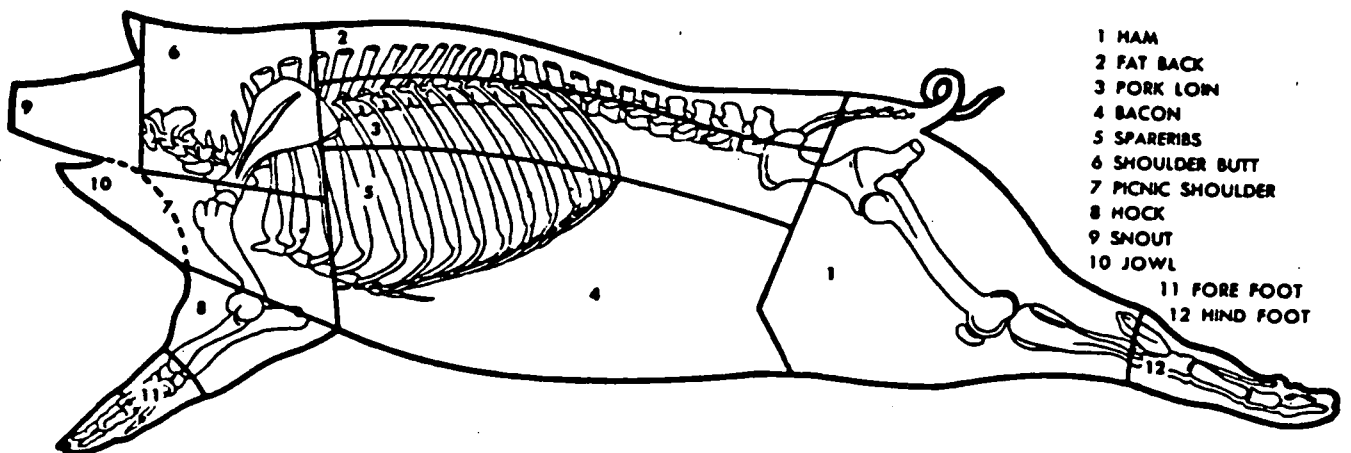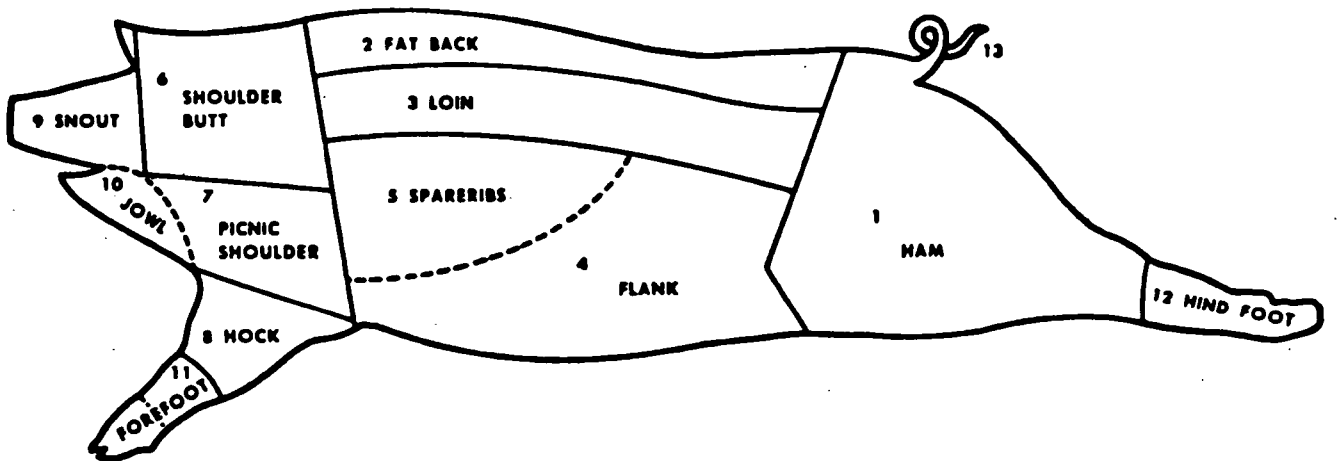
Ovis aries (Sheep) Meat Portions.

Figure 3.

1 LEG
2 LOIN
3 RACK OR RIB
4 BREAST
5 NECK
6 SHOULDER
7 SHANK